

# Cardiovascular system

Venous congestion in neck indicates increased venous pressure - same true in veins in arm when raised above level of auricle

## Pulse

Hem Cunningham  $46-48 = \text{pulse rate}$   
in 80' - after race

Both radial pulses

1. thrombosis of subclavian or brachial
2. aneurysm

## rhythm

1) sinus arrhythmia - change in respiration (speed of respiration common under 30)

2) extra systoles (The pause followed by extra big beat draws patient's attention to them)  
very common in normal

③ pulsus bigeminus // // //  
bigeminus // // //

almost always in diathesis

1) damaged heart

2) over digit aligation

pulse paradoxus - just opposite of sinus arrhythmia -  
volume pulse paradoxus - just opposite of sinus arrhythmia -  
pericardial effusion or massive pneumothorax  
determine blood pressure from pulse - Dr. Thayer  
could get within few mm. also Dr. Hammon

## Condition of vessels:

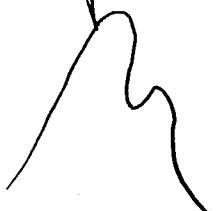
- 1) ophthalmoscopic
- 2) radial搏动 pipe stem - whale-like

## ⑤ pulsus alternans

////, good prognostic significance  
will die in 3 months - best to pile up blood pressure readings

in by pernicious or at heart disease or combination

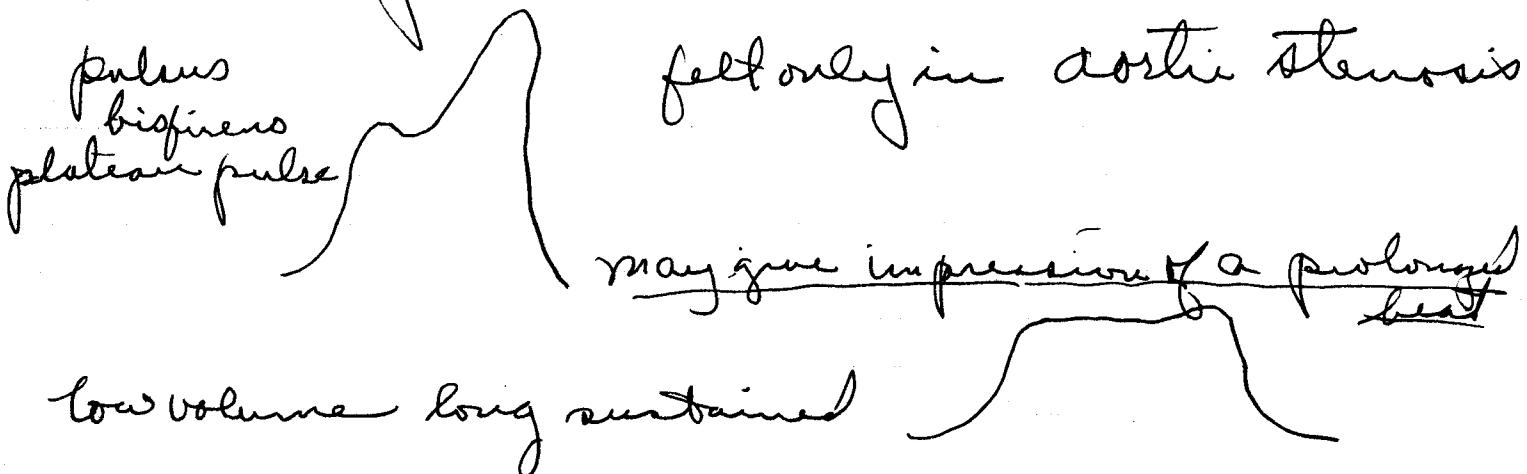
### Dicrotic pulse



typhoid fever, flu, measles where  
B.P low

If find in aortic insufficiency  
indicates mitral stenosis also  
tells whether syph. or rheumatic

### Anacrotic pulse



### Collapsing, Corrigan, Water hammer

bottle = air  
exhausted air  
water in it - shake  
to get impulse

### Capillary pulse

- 1) pressure on fingernail
- 2) to auscultation
- 3) glass slide against nail
- 4) in retina

Atrial fibrillation

often hard to tell if extra systole or  
this — extrasystoles disappear  
in exercise

pulse deficit = difference between apex beat  
and beat of arm

today

peripheral vessels

pulses

pulse in forced inspiration & expiration  
the pulse in neck & apex beat

pulse 66 before exercise

pulses equal

no jugular pulsations observed

no pulse deficit

Patient

- 1) Capillary pulse
- 2) Dapping pulse — put finger to arm
- 3) Pistol shot sound (over femoral)
- 4) Duroziez's murmur — continuous  
murmur over great vessels in  
artery insufficiency

all peripheral signs of portal insufficiency after  
moderate exercise or hyperthyroidism =  
dithrophenol (increased metabolism)

## Observation and palpation of pectoridium

P.M.I. may not actually be at apex of heart - may 1 or  $1\frac{1}{2}$  cm within margin of heart - however gives good idea of heart size  
changes in intensity & perhaps position & movement from standing to lying or from left to right & vice versa  
if heart rheumatic fever have adhesions at some time and all mediastinal structures stuck together so does not move & change of side strong in:

- 1) aortic insufficiency - syphilis or otherwise
- 2) hypertension
- 3) Lt. ventricle by hypertrophy
- 4) Graves disease
- 5) fever;

diminished in:

- 1) emphysema
- 2) left pneumothorax
- 3) exudative pleurisy

have patient sit up or even lean forward to get it

Shift to left:

- 1) cardiac hypertrophy
- 2) adhesions in L. lung
- 3) adhesions to left
- 4) air or fluid on right

Shift to right:

Same causes

cardiac outline + body build

2<sup>nd</sup> interspace to 5<sup>th</sup> interspace or 6<sup>th</sup> rib

to at parts present on chest

location of valves + auscultatory areas of each  
heart pulled down to appear smaller in forced inspiration

ant. aspect of heart almost entirely right ventricle

must consider body build and age

heart appears enlarged in pyknics      heart appears enlarged in young

an. Heart goes for Apical very good

EKG not yet too good best to be good P.D. more

today:

1) Surface markings of heart (Chambers)

2) location of valves

3) look for pulsations

should be up & down left of sternum  
any on

4) PMI on stand, sitting, exercise, sit & left

5) epigastric + episternal pulsations

Rheumatic fever  
small for age (15)  
pericardial fullness  
diffuse waxy <sup>P.M.</sup> pulsations - 6<sup>th</sup> space almost  
in mid axillary line  
thrill

diastolic tap in pulmonary area indicates of  
mitral stenosis

pulmonary tap = palpable 2<sup>nd</sup> pulmonary sound  
due to elevated pressure in  
pulmonary circuit

Brodie's sign

adhesive mediastinum & pericarditis

erosion of auricular process in septole

10 grams a day (150 grams)

10 grams IV then 10 grams a day

Henry Moulton

longer expectancy in combined lesions

5/16/44 Percussion of heart

transverse diameter over 15 cm is abnormal

absolute dullness - no lung over heart  
relative " - lung "

today;

1 PM

2) percuss absolute & relative dullness

can't percuss lower border

5/23/40

## Auscultation of heart

1<sup>st</sup> & 2<sup>nd</sup> heart sounds

3rd first described by Mayer in 1911

1<sup>st</sup> - much discussion as to origin - York, 1937, favored view that purely valvular (AV leaflets)

2<sup>nd</sup> - purely valvular - innocent

3<sup>rd</sup> sound = expulsion of blood into ventricle  
by auricle late in ventricular diastole

intensity controlled by same factors as heart sounds

all gallops in diastole

Kotterman - showed all triple rhythm  
protodiastolic or presystolic

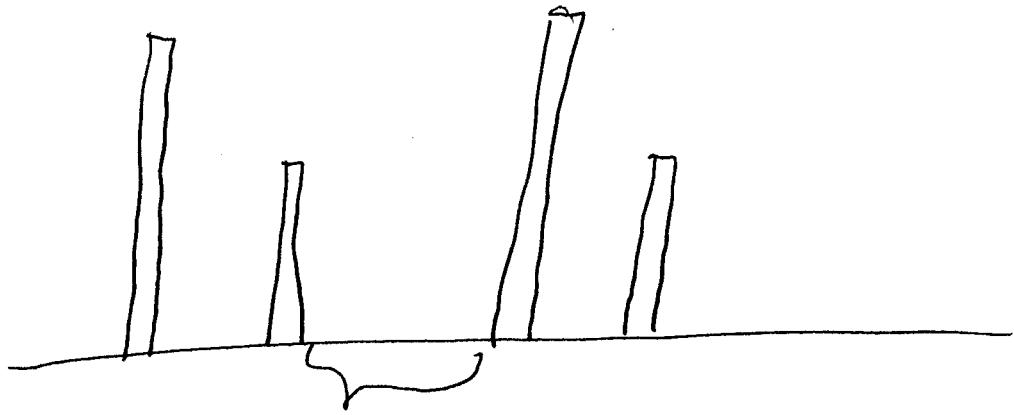
Heart murmurs of aortic valve right over left in left interface

Pulmonary murmur of auricle

Lystolic murmur

brach, blowing

Sea gull murmur = unpinched chordae tendineae



in line

may have referable only to mitral area

- 1) early diastolic (protodiastolic)
- 2) mid "
- 3) late or preaprotodiastolic or mid diastolic (disappears in arrhythmia  
fibrillation of mitral stenosis)
- 4) Complete

for aortic area

all murmur

early diastolic

divertitious sounds

pericardial friction rub (sometimes can mistake a pleural rub for it - exclude by no breathing)

sternal crackles - normal

Patient

aortic diastolic murmur transmitted down & to left to 3rd left intercostal space when combined with peripheral signs minimal